

## Cleanup and Restoration at Applied Environmental Services *Glenwood Landing, NY*

NOAA's Damage Assessment, Remediation, and Restoration Program (DARRP) acts as a trustee to protect and restore natural resources injured by releases from waste sites, oil spills, and ship groundings.

### Site History

The Applied Environmental Services (AES) Superfund Site, located adjacent to Hempstead Harbor on Long Island Sound in Nassau County, NY, served as a petroleum product storage area beginning in 1939 and then as a storage facility for hazardous wastes since 1974. Groundwater and leachate flowed from the site into Motts Cove and Hempstead Harbor, contaminating salt marshes important for spawning and nursery habitat to NOAA trust resources such as striped bass, American shad, flounder, and shellfish.

### Remediation

NOAA worked with EPA to develop a remedy for the releases protective of natural resources. The 1991 EPA remedy included:

### Highlights

**Developed protective remedy in collaboration with EPA.**

**Received \$160,000 in settlement funds for restoration and monitoring.**

**Replaced deteriorating wooden bulkhead with steel bulkhead to protect mudflats from on-site contamination.**

**Created 1-acre salt marsh and coastal shoreline at Bar Beach Lagoon.**

- Groundwater treatment and collection
- Soil vapor extraction and in-situ biodegradation
- Elimination of surface water sheen
- Reduction of sediment contaminants
- Monitoring
- On-site deteriorating wooden bulkhead replaced with steel bulkhead in 2004 to protect mudflats from contaminated soils



### Assessment

NOAA and its co-trustees, the U.S. Fish and Wildlife Service and the State of New York, reached a settlement with the responsible parties (RPs) in 1992 for injuries to natural resources such as saltwater marsh habitat adjacent to the site. The monetary settlement included \$50,000 for primary restoration at the site, \$50,000 for off-site restoration, and \$60,000 for monitoring.



## Restoration

The Trustees and RPs determined that off-site restoration would best serve the resources injured by site releases based on on-site data from Motts Cove and Hempstead Harbor that indicated non-optimal environmental conditions for salt marsh revegetation unrelated to site releases. Following community input, the Bar Beach Lagoon, located across Hempstead Harbor from the Superfund site, was selected for restoration.

### Bar Beach Lagoon Restoration Project

- Created a 1-acre salt marsh and coastal shoreline
- Partnered with Town of North Hempstead and North Shore Audubon
- Leveraged settlement funds with NOAA's Community-Based Restoration Program
- Constructed in 2003
- More than 3,000 cubic yards of rubble, rock, tires, timber debris, gravel excavated
- Over 8,000 low and high marsh plants installed by volunteers
- 5-year monitoring plan developed
- Performance criteria attained for 90% plant survival and 85% cover after 3 years in 2006



### Year 4 monitoring results

- 91.1% mean saltmarsh and 0.3% invasive plant cover
- Benthic and avian diversity higher than reference site at restored site but abundance lower
- Fish density/abundance same or higher than reference site at restored site
- Additional monitoring funds will be sought to continue to assess longer term recovery

For further information about this case, contact Lisa Rosman at [Lisa.Rosman@noaa.gov](mailto:Lisa.Rosman@noaa.gov) or visit the DARRP Web site at [www.darrp.noaa.gov](http://www.darrp.noaa.gov).

**For further information about DARRP, please visit**  
**<http://www.darrp.noaa.gov>**

